

Reasons for Teachers' Adaptation of Substance Use Prevention Curricula in Schools With Non-White Student Populations

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In this study we investigate reasons why teachers adapt substance use prevention curricula in the nation's middle schools. We hypothesize that these reasons will be most salient in schools with racially and ethnically diverse student populations, for whom teachers may believe it appropriate to tailor their curricula. The study sample comprised a nationally representative sample of lead substance use prevention teachers in the nation's middle schools. Respondents answered questions concerning eight student problems or needs that constituted reasons why they might adapt their prevention lessons. Controlling for a variety of school and teacher characteristics, we found that teachers in high minority schools were more likely to adapt curricula in response to three of the eight characteristics presented: youth violence, limited English proficiency, and various racial/ethnic or cultural groups. We suggest that curriculum developers make a systematic effort to understand how teachers are adapting their curricula in high minority schools and incorporate these modifications, if found effective, into their curricula.

KEY WORDS: fidelity; adaptation; substance abuse; prevention.

INTRODUCTION

There is increasing evidence to suggest that the adaptation of classroom-based substance use prevention curricula in the nation's middle schools is widespread. Prior studies have found that many teachers of such curricula omit key points (Botvin *et al.*, 2001) or even entire lessons (Tricker & Davis, 1988), whereas others fail to follow prescribed instructional strategies (Tappe *et al.*, 1995). Teachers appear to adapt curricula for any of a wide variety of reasons,

and as few as 15% report that they follow curriculum guides very closely (Ringwalt *et al.*, 2003). This issue is of importance to the substance use prevention field, insofar as teachers are generally advised to implement curricula as specified, or risk a reduction in the effects these curricula have demonstrated (Blakely *et al.*, 1987; Bosworth, 2000; Carlsyn *et al.*, 1977; Centers for Disease Control and Prevention, 1994; Drug Strategies, 1999; McDonald, 2000; Tobler & Stratton, 1997). Concerns about the relationship between curriculum fidelity and effects have been validated in much of the empirical literature on the subject (Abbott *et al.*, 1998; Botvin *et al.*, 1990; Hansen, 2001; Hansen *et al.*, 1991; Parcel *et al.*, 1991; Pentz *et al.*, 1990; Rohrbach *et al.*, 1993). On the other hand, many observers (Backer, 2001; Basch, 1984; Berman & McLaughlin, 1976; Domitrovich & Greenberg, 2000; Elias *et al.*, 1997; Farrar *et al.*, 1980; Ridgely & Jerrell, 1996; Rogers, 1995; Scheirer, 1994; Zimmerli, 1981) believe that some degree of curriculum adaptation by teachers is not only inevitable but desirable, given wide variation in schools' and students' ethnic and

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cultural contexts, and given the presumed need for teachers to internalize and “own” key instructional strategies and content.

Curricular adaptation may be particularly appropriate given that the cultural and ethnic background of students to whom a given curriculum is administered may differ from that of the students for whom it was originally developed (Bauman *et al.*, 1991; Chen & Rossi, 1984; Cronbach, 1982). Because available empirical evidence suggests that learning styles differ across ethnic groups (Dunn & Griggs, 1990; Hickson *et al.*, 1994; Nuby & Oxford, 1998), the developers of health promotion programs are advised to engage in “cultural tailoring” (Pasick *et al.*, 1996) to incorporate into their prevention materials the norms, values, and experiences of the populations targeted (Marin *et al.*, 1995; Resnicow *et al.*, 1999). Although there remains considerable disagreement concerning how best to achieve this objective (Grossman, 1995), and how to find the right balance between universal and targeted materials (Sabogal *et al.*, 1996), there is a growing recognition of the potential benefit of using culturally tailored interventions to improve program effects (e.g., Bechtel & Davidhizar, 2000; Brach & Fraser, 2000; Resnicow *et al.*, 1999). That said, the appropriateness and effects of cultural tailoring has yet to be empirically demonstrated in the field of substance use prevention (Kumpfer *et al.*, 2002).

In this study we explore whether teachers in predominantly minority middle schools are more likely than those in majority White schools to adapt substance use prevention curricula. Specifically, we examine variations in teachers’ assessments of a set of specific student problems, such as violence, and needs, such as limited English proficiency, that constitute reasons why the teachers may adapt their prevention lessons. For the reasons mentioned above, we anticipate that teachers’ curricular adaptations are likely to increase with the proportion of their schools’ minority students.

METHODS

Study Sample

We targeted all regular public and private schools in the 50 States and the District of Columbia that included middle school grades. Many of these schools encompass more than middle or junior high grades due to the wide variety of grade configurations among U.S. schools. Eligible schools were those that included grades 7 or 8, or those that were limited to grade

6 or to grades 5 and 6. We excluded schools if they enrolled fewer than 20 students, reported that they had no substance use prevention program whatsoever, or were nonregular (i.e., alternative, charter, vocational/technical, or governmental schools, including those supervised by the Bureau of Indian Affairs and by the Department of Defense) in nature.

We selected a random sample of schools from our sampling frame, which we constructed from the Quality Education Data, Inc. (1998) database. As sampling strata for the public schools, we used population density, school size as measured by enrollment in the middle school grades specified above, and school district poverty level, with equal probability within each stratum. Sampling strata for the private schools was limited to school type (i.e., Catholic vs. other). Of the 2,852 public and private schools with middle school grades selected for the sample, 2,648 (or 92.8%) met the eligibility criteria specified above, of which 1,905 yielded completed questionnaires, for an overall response rate of 71.9%. Further information about the sample may be found elsewhere (Jones *et al.*, 2001, 2002).

Data Collection

We collected study data from February through September 1999 by mailing a questionnaire to the lead substance use prevention teacher or other school staff member most knowledgeable about the selected school’s substance use prevention program. For nearly all schools, we identified the appropriate respondent in advance through telephone contact with either someone in the school principal’s office, or (for the public schools) via the substance use prevention coordinator serving the school’s district. Respondents received a \$10 incentive to complete the 45-minute questionnaire.

Instrumentation

We assessed *curriculum adaptation* with the following question: “Have you adapted your substance use prevention lessons to meet any of the following special problems/needs? (*Select yes or no, or please mark if not a problem/need for your school.*)” Potential problems or needs included “student and community poverty,” “youth violence,” “gang activity,” “discipline problems,” “sexual activity,” “various racial/ethnic or cultural groups,” “special needs or disabilities,” “students’ substance abuse problems,”

and “students whose parents have substance abuse problems.”

We assessed the following demographic characteristics of the middle schools surveyed. On the basis of the QED (1998) file, we classified schools as either public or private, measured school enrollment, and measured their proportion of their minority (i.e., non-White) students. From the completed questionnaires we obtained the grades that the schools included, and the proportion of students in each grade who were eligible to receive a free or reduced-price lunch as part of a federal assistance program. We included this latter measure as a proxy for the poverty level of students served. To assess respondent background characteristics, we asked respondents to indicate their total years of experience as a classroom teacher, total years of experience teaching substance use prevention, age, and gender. For teachers’ race we asked them if they were American Indian or Alaska Native, Asian, Black of African American, Native Hawaiian or other Pacific Islander, or White, and invited them to select all categories that might apply. In a separate question we asked them if they considered themselves Hispanic or Latino. A copy of our questionnaire is available from the first author on request.

Data Analyses

We begin by describing the sociodemographic characteristics of the schools and respondents in our sample. We continue with weighted national estimates of teachers’ responses to each of the problems or needs for which they may have adapted curricula, stratified by the proportion of non-White students their schools (less than vs. at least half). For these and subsequent analyses, we aggregate respondents who

reported that they did not adapt prevention lessons in response to a given problem or need, with those who said that the problem or need was not a problem for their school. To test for the significance of the relationships observed, we regressed teachers’ dichotomous responses to whether they adapted their curricula in regards to each student problem or need (yes vs. no/not a problem or need), on the proportion of their schools’ minority students. For this set of analyses, we controlled for school type (public vs. private), number of students enrolled, and the proportion of students eligible for a free or reduced-price lunch. We also controlled for teachers’ age, gender, ethnic background (White/non-White) and the total number of years they have taught, as well as the number of years they have taught prevention.

Because study data were obtained by means of a multistage probability sampling design, we weighted all analyses. These analyses adjusted both for differential probabilities of initial sample selection and for nonresponse bias (Kalton & Maligalig, 1991). All analyses were conducted with SUDAAN, which applies a Taylor series linearization method to account for sample design effects (Shah *et al.*, 1996).

RESULTS

Two-thirds of the schools in our sample were public (as opposed to private), and 29.7% were eligible for free or reduced-price lunches. On average our respondents, whom we selected because their school considered them its “lead” prevention teacher, had 15.1 years teaching experience, of which 10.6 included teaching prevention.

Table 1 displays the proportion of teachers indicating that they adapted substance use prevention

Table 1. The Prevalence of Students’ Special Problems or Needs as Reasons for Teachers’ Adaptation of Substance Use Prevention Lessons, by % Non-White Students

Students’ special problems or needs	N	% Minority OR ^a (95% CI)	School problem or need		
			% minority		Total
			<50%	50%+	
Youth violence	1280	1.01*** (1.01,1.02)	41.8	66.8	46.6
Discipline problems	1282	1.01 (1.00,1.01)	48.7	65.5	52.0
Sexual activity	1281	1.00 (1.00,1.01)	51.5	65.3	55.1
Limited English proficiency	1278	1.02**** (1.01,1.03)	11.5	32.5	15.5
Various racial/ethnic or cultural groups	1275	1.02**** (1.01,1.03)	22.6	56.6	29.2
Special needs or disabilities	1287	1.00 (0.99,1.00)	37.0	43.1	39.2
Substance abuse problems	1280	1.00 (1.00,1.01)	40.7	50.8	42.6
Parents with substance abuse problems	1280	1.00 (1.00,1.01)	43.7	57.2	46.3

^aControlling for covariates specified in the analysis section.

p* < 0.05. *p* < 0.01. ****p* < 0.001. *****p* < 0.0001.

lessons for any of eight reasons, disaggregated by the proportion of minority students in their schools (less than vs. at least half). Note that the schools sampled comprised a mean of 25.4% minority (non-White) students (95% CI = 24.1%, 26.7%). This table's fourth and fifth columns indicate that teachers in higher (>50%) minority schools were, generally speaking, much more likely to adapt curricula than those in schools characterized by lower (<50%) minority student populations. The table's third column indicates the results of analyses in which we regressed teachers' reports of adaptation for each reason given on the proportion of minority of students in the school, controlling for the variables specified in the previous section. Shown in this column are odds ratios and associated confidence intervals for *each single percentage point* of change in the proportion of minority students in the school, which ranged from 0 to 100%. Because these increments are so small, their associated odds ratios appear trivial, and are much less useful to an understanding of study findings than the *p* values pertinent to each odds ratio. These *p* values reveal that three of the eight reasons for adaptation were significant: youth violence, limited English proficiency, and various racial and ethnic cultural groups.

DISCUSSION

As expected, in this study we found a direct relationship between teachers' likelihood to adapt curricula for eight reasons of pertinence to their students' problems and needs, and the proportion of minority students in the teachers' schools. Even after controlling for a variety of characteristics related to the school and respondent, including student poverty, three of these reasons remained significantly associated with the proportion of the school's minority students: youth violence, limited English proficiency, and various racial and cultural groups. For these three reasons, the *differences* in the percentage of teachers in high (at least half) versus low (less than half) minority schools reporting each as a reason for adaptation were quite high at 25, 21, and 34%, respectively. We further note the relatively high proportion (i.e., 15–55%) of teachers across all public and private schools in our sample who indicated that they adapted prevention lessons for any of the various reasons we specified.

According to Kreuter *et al.* (2002), these adaptations and modifications may fall into any of several partially redundant classifications. They may be peripheral in nature, in that they address the "surface" (Resnicow *et al.*, 1999) characteristics of the popula-

tion targeted; for example, in the selection of titles, designs, or music to enhance audience receptivity. The modifications may be "evidential," in that they contain epidemiological or etiological data of particular pertinence the group, or they may be "linguistic," in that they present materials using language that is familiar to the group, either as direct translations (e.g., substituting "Jorge" for "George") or by the use of words or phrases that carry particular cultural freight (e.g., "machismo"). Finally, modifications may be "constituent-involving," perhaps incorporating speakers from the community or older students from the school as delivery agents (Resnicow *et al.*, 1999) of the culture. Unfortunately, we have no basis on which to speculate as to the types of modifications teachers may have made for each of the three characteristics we found were significantly related to minority student populations. At this juncture, these various approaches to cultural tailoring have yet to be applied in any systematic fashion to school-based substance use prevention curricula. Nor is the field sufficiently developed that principles or practices of effective adaptation—for purposes of cultural tailoring or otherwise—can be specified with any degree of confidence. On the contrary, the available empirical evidence suggests that curricula modifications are more likely to erode than to enhance effectiveness. We are particularly concerned that any indication given practitioners that they are free to adapt their curricula may be construed as a general license to do so for any of a variety of reasons, including reductions in teaching time or burden.

That said, our findings should be considered more suggestive than definitive. Of greatest concern, respondents' answers to our questions do not allow us to tease out how much they have adapted their prevention lessons, and whether their adaptations took the form of omissions to lesson content or modifications to the teaching strategies specified for each. Indeed, a third alternative is entirely plausible. At least some of our teachers may have taught their curricula precisely as specified, with the exception of a modest amount of material they added, perhaps to address the student problems or needs specified. Further, we did not assess the specific curricula that our respondents reported adapting. Had we been able to do so, we likely would have found considerable variation in the specificity of the curricula delivered and their attendant instructional manuals or guides. Also limiting the interpretability of our findings are biases inherent in our respondent sample. We deliberately identified as study respondents those teachers who, we

were informed, were most cognizant of their schools' substance abuse prevention programs. The resulting sample comprised respondents whose overall teaching experience (15 years) and years teaching prevention (11 years) were both substantial. Given suggestions that teachers may exercise greater flexibility in implementing their curricula as they grow more proficient over time (Parcel *et al.*, 1991), it seems likely that a more representative sample of teachers of substance use prevention curricula may have yielded lower estimates of reasons for adaptation.

Even given these limitations, study results suggest the importance of investigating further why, how, and to what extent teachers are modifying prevention curricula, particularly in schools with high minority student populations. More to the point, it would also be very helpful to understand the value of any modifications that appeared with some consistency, so that recommendations can be made as to their potential replication and incorporation into curricular guides as desirable variants for discrete high minority student populations. Although the empirical literature providing guidance as to how best to tailor prevention materials for high minority audiences has been very limited to date (Kreuter *et al.*, 2002; Marin *et al.*, 1995; Resnicow *et al.*, 1999), there is a burgeoning conceptual literature that addresses this issue. For example, Sabogal *et al.* (1996) suggest a two-stage approach, the first of which involves collecting qualitative data through individual interviews and focus groups to understand a particular audience's needs and develop novel ideas about message content and delivery. To these formative approaches we would add investigating what practitioners like the prevention teachers who constituted our respondents are actually *doing* in the field. Then, in a second and more advanced stage, Sabogal and colleagues (1996) suggest that evaluators and curriculum developers can use more structured methods to determine the effects of these modifications. But, as indicated above, these issues require considerable further study before recommendations can be made to the field.

In conclusion, a substantial proportion of the nations' substance use prevention teachers report that they adapt curricula to meet the particular needs and problems of their students, especially in high minority schools. This finding suggests that curriculum developers should make a considerable effort to discover why and in what ways teachers are dissatisfied with their curricula, and (in particular) the ways in which the curricula may fail to address prevention issues in a manner that is culturally sensitive or responsive to

students' learning styles. In addition, we need to explore the relative role of inter- versus intra-group differences in explaining the moderating effects of students' learning styles and cultural affiliations on the achievement of program objectives, to assess the level of importance of such considerations as rationales for program adaptation. We also need much more information concerning the specific deletions and modifications that teachers are making most commonly to the curricula they implement, and for what reasons (e.g., personal convenience, cultural appeal or relevance, students' learning style, temporal constraints). If considered of potential value, these modifications should be empirically tested and then incorporated if they were found to enhance the curriculum's appeal to, and (of more importance) its effectiveness with, particular populations. Given that teacher reinvention of curricula is inevitable, developers would seem to have a responsibility to provide suitable options to teachers to enhance the cultural sensitivity of their curricula. Finally, researchers and developers do owe practitioners a clear set of guidelines concerning what adaptations are permissible and how they should be implemented, but not without clear evidence that such adaptations will, at the very least, neither threaten nor attenuate program effects.

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